



Australian Government

CPCCRI3014 Perform advanced structural steel erection

Release: 2

CPCCR3014 Perform advanced structural steel erection

Modification History

Release 2 Updated reference to general construction induction training program.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCCR3014A Perform advanced structural steel erection. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to erect or install permanent steel structures, and to coordinate the slinging, stability, lifting, moving and placement of loads in conjunction with the crane operator. It includes selection of equipment, and load distribution and calculation.

It applies to workers who erect and install permanent steel structures, and who would be expected to take responsibility for organising and completing these tasks with a high degree of self direction.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Pre-requisite Unit

CPCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Construction

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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| 1 Plan and prepare to perform advanced structural steel erection. | 1.1 | Interpret work order and associated documentation and clarify requirements with relevant persons. |
| | 1.2 | Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety, environmental and workplace requirements. |
| | 1.3 | Select plant, tools and equipment required for work tasks, check for serviceability and rectify or report identified faults. |
| | 1.4 | Calculate materials quantities. |
| | 1.5 | Acquire materials for task and locate them safely ready for use. |
| 2 Select and check equipment. | 2.1 | Erect required safety signage and barricades and fit personal protective equipment (PPE). |
| | 2.2 | Select resources, materials, tools and equipment in accordance with load charts and inspect for compliance with work order. |
| | 2.3 | Inspect lifting equipment in accordance with manufacturer and workplace requirements. |
| | 2.4 | Label, reject and dispose of any lifting and load-shifting equipment identified as inconsistent with manufacturer requirements, to prevent its use in any circumstance. |
| | 2.5 | Select elevated work platforms and other means of mechanical access systems as specified. |
| | 2.6 | Install fall arrest equipment. |
| | 2.7 | Select personnel cartage systems. |
| 3 Connect equipment. | 3.1 | Calculate and confirm load mass and load distribution. |
| | 3.2 | Sling loads to protect load and prevent damage to slings. |
| | 3.3 | Secure whole or part loads to prevent uncontrolled movement. |
| | 3.4 | Attach slings, or parts of slings, to load and position them to ensure safe movement. |

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| | 3.5 | Attach slings, or parts of slings, to hook while hoist wire is vertical. |
| | 3.6 | Attach tag lines to load as specified. |
| | 3.7 | Perform test lifts to ensure safe and secure movement of load as specified. |
| 4 Move and position loads. | 4.1 | Determine load destination and prepare landing area to accept load. |
| | 4.2 | Assemble lifting or pulling device and erect as specified. |
| | 4.3 | Move load safely to required destination and secure in position in accordance with work order and workplace requirements. |
| | 4.4 | Use standard communication signals to coordinate safe movement of load. |
| 5 Remove equipment. | 5.1 | Dismantle lifting/moving equipment and packing, return to resting position and inspect for wear. |
| | 5.2 | Complete logbook and site records in accordance with workplace requirements. |
| 6 Clean up. | 6.1 | Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements. |
| | 6.2 | Clean, check, maintain and store plant, tools and equipment in accordance with manufacturer and workplace requirements. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCR13014A Perform advanced structural steel erection.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCR3014 Perform advanced structural steel erection

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Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by performing advanced structural steel erection to complete the erection of one portal frame building, including trusses, bracing, purlins and girts, and incorporating at least one strongback lift and one bowstring lift.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for performing advanced steel erection under applicable Commonwealth, state or territory work health and safety (WHS) legislation and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety manuals and instructions for plant, tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - working at heights requirements
 - environmental and worksite safety plans
 - reporting problems
- scope of work for performing advanced structural steel erection:
 - calculations:
 - load charts
 - fleet angles
 - diverter sheaves
 - lead loads
 - head loads

- load angle factors
- multiple fall
- load share
- precast compliance charts
- safe working loads
- load slinging methods:
 - straight sling
 - adjustable sling
 - reeved sling
 - inclined sling
- using advanced lifting techniques, including strongbacks and bowstrings
- installing steel components:
 - columns
 - beams
 - bracing
 - rafters
 - purlins
 - girts
 - bridging and fly bracing
 - trusses
 - freestanding structures
 - portal frame buildings
- types, characteristics and limitations of tools, equipment and materials required for performing advanced structural steel erection:
 - chain slings
 - flexible steel wire rope (FSWR) slings
 - air winches
 - chain blocks
 - chain winches
 - come-alongs
 - drifts
 - eye bolts
 - hammers
 - hand operated creeper winches
 - jacks
 - podgers
 - pulley blocks
 - shackles
 - shifting spanners
 - sledge hammers

- spirit levels and automatic levels
- tape measures
- trolleys
- turn buckles
- wedges
- wrenches
- requirements for use of tools, equipment and materials for performing advanced structural steel erection:
 - safe operating procedures
 - operational, maintenance and basic diagnostic procedures
 - workplace and equipment safety requirements
- signalling methods and communications
- processes for completing logbooks and site records
- requirements for cleaning up work area, maintaining and storing plant, tools, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

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